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**Shin et al.**

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(54) **HEAD LAMP IN VEHICLE**

(56) **References Cited**

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See application file for complete search history.

U.S. PATENT DOCUMENTS

2002/0051365 A1\* 5/2002 Yokoi ..... F21S 48/145  
362/512  
2011/0170308 A1\* 7/2011 Kinoshita ..... B60Q 1/076  
362/516  
2013/0107560 A1 5/2013 Kim et al.

FOREIGN PATENT DOCUMENTS

JP 2008-027650 A 2/2008  
JP 2008-192313 A 8/2008  
KR 10-2004-0037949 A 5/2004  
KR 10-0506712 B1 8/2005  
KR 10-2010-0025253 A 3/2010  
KR 10-2011-0074345 A 6/2011

(Continued)

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(57) **ABSTRACT**

A head lamp in a vehicle may include a light source for emitting a light, a reflector for reflecting the light forward from the light source, a lens for transmitting the light being forwarded toward a front from the light source and the reflector, a holder having one end coupled to the lens and the other end coupled to the reflector to make the lens spaced at a predetermined distance from the reflector, and a movable shield disposed between the light source and the reflector and the lens for selectively shielding a portion of the light being forwarded toward the lens from the light source and the reflector, or not shielding the portion of the light being forwarded toward the lens from the light source and the reflector when being moved to create a space between the movable shield and a lower end of the holder to allow the light pass through.

**11 Claims, 7 Drawing Sheets**

